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From a Medical Student

Candide Becomes a Doctor

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It has been shown that things cannot be otherwise; since everything was created for a purpose, this purpose must inevitably be the best possible. Observe that noses were made to wear spectacles and so we have spectacles. Legs were obviously intended to wear breeches and so we have breeches. Stones were made to be cut and to be made into mansions. That is why His Lordship has such a very fine mansion. The greatest baron in the province should be the best housed. Pigs were made to be eaten, so we eat pork all the year round. Therefore, people who told us merely that everything was well ordained were talking nonsense. They should have said, "Everything is ordained for the best."[1]

SOME OF YOU will probably attribute this exercise in casuistry to Pangloss, Voltaire's metaphysico-theologo-cosmologist and arch-charlatan, whose verbal veil drops so easily before Candide's ingenuous eyes in the satire of the same name. You are to be congratulated for your scholarly acumen, and pardoned for your error. Rather this catechism was recited to me by a physician and admissions committee member at a prominent institution about five years ago, when I was applying to medical school. Many of my classmates heard in substance the same credo at their various interviews across the country, five years ago and again last year, although I doubt that many of them were as naive as I.

For during that interview, punctuated by the tireless stream of messages over the intercom and patients through the corridors, I began to understand the reasonableness of my inquisitor's characterization of American medicine. Peering through a window on the twelfth floor of that massive but austere edifice in which death and misery were being exorcised with a tirelessly efficient, calculated scientific vigor, unconsciously I had begun to nod my head. There were the people, our patients, myriad specks stretching far below us to the ocean. They live somewhere in that jumbled cityscape which beggars even Cézanne's cubist towns. From that abstract panorama they ascend to our medical fortress. Here, we restore health. Laboratories on the vanguard of technical sophistication relentlessly winnow nature's produce, separating publishable wheat from statistically insignificant chaff. Catheters are placed, fluids are analyzed, organs are investigated with a panoply of probing rays, sensitive fingertips and subtle assays, all eventuating in pharmacologic regimens or surgical operations which purge disease. Healthy, our erstwhile patients return to their cubist mural. Yes, I was beginning to see things perfectly clearly.

Yet there are certain murky thinkers and errant detractors who fail to appreciate the distinctions which alone make possible the flawless operation

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An address delivered to the author's classmates on the occasion of their graduation from the School of Medicine at the University of California, Davis, June 6, 1975.

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of our medical principality. Robert Cook[2] is one. He has investigated the relationship between nutrition and mortality among children less than five years old living in the Caribbean. Although infant mortality rates in these islands ranged from two to four times those in Great Britain, death rates among one-year-olds ranged from 5 to 50 times Britain's rates. To explain these data Cook demonstrates a close inverse correlation between per capita income, used as a measure of nutritional status, and pediatric mortality. Some 20 to 60 percent of eastern Caribbean pediatric beds are occupied by children with intestinal disease due to malnutrition. In 1967 in Jamaica 65 percent of deaths among children six months to three years of age was attributed to malnutrition as the sole or major complicating cause. All told, of the 150,000 children born in the Caribbean in 1969, 3,300 will die in childhood because of malnutrition. And while data availability and diversity of nutritional status recommend the Caribbean area to epidemiologists, conclusions drawn here apply even more pointedly to sub-Saharan Africa, to parts of India, to Bangladesh, to southeast Asia and to many regions in Central and South America.

The toll from malnutrition is probably greater among the living than the dead. Studies from Serbia,[3] Britain,[4] Peru,[5] the United States[6] and India[7] show diminished intelligence among populations chronically malnourished during childhood, compared with control groups matched for age,[3-7] sex,[4-7] race,[5-7] birthweight,[6] socioeconomic status,[5-7] family size,[5-7] birth order[7] and parental education.[5,7] M. J. Begab[8] at the National Institutes of Health estimates that 11 million, or about 3 percent of children in developing countries, are symptomatically undernourished. And while he diplomatically observes that short-term undernourishment of children and mothers in eastern Europe during World War II did not lower the mean IQ of survivors, this was at the expense of a selection process whereby increased numbers of abortions, stillbirths and neonatal and childhood deaths killed all but the most resilient and best-fed children. Unlike these unique conditions during World War II, chronic protein deficiency, which is called kwashiorkor in medical jargon, continues unabated in many areas including Uganda and Jamaica, where it has been linked to shortened stature and blunted intelligence.[9,10] Lending these considerations added urgency are two recent reports in *Lancet*[11,12] suggesting that at least short-term kwashiorkor-induced mental deficiency may be reversible with improved nutrition.

Clearly, the health profession is in need of some very careful distinctions in this regard. Of course everybody regrets the conditions detailed above, but the plain fact is that they lie completely outside the realm of medicine. Food distribution is the province of economics and politics. If the United States government chooses to spend 55,000 lives and $400 billion on a military venture in southeast Asia rather than attempt to eradicate malnutrition, we in our hermetic medical fortress are insulated against all recriminations. Let the government consult us in our laboratories on the consequences of malnutrition or let the undernourished visit our clinics and we will respond with the technical perfection which is the hallmark of American medicine; but heaven forbid that we should forsake the carefully drawn distinctions which guard the ramparts of our optimal world to respond to suffering and disease due to nonmedical factors.

Regrettably, certain misguided detractors make this careful attention to qualifications and provisos as needful domestically as abroad. R. M. Factor and Ingrid Waldron[13] have shown a positive correlation between mental hospital admission rates and four factors in Cook County, Illinois: population density, high concentration of multiple-dwelling units, frequency of dwelling changes and low percentage of home ownership (that is, the four factors which functionally define a ghetto).

On another front, J. P. Bunker and J. E. Wernburg[14] have recently focused on the relationship between surgical operations and health. Canadian gall bladder operation rates are five times those in the United Kingdom, and mortality from gall bladder inflammation is twice as high in Canada as in the United Kingdom. Unless cholecystitis is far more aggressive in North America than in Europe, an unlikely possibility, one must attribute these differences primarily to surgical aggressiveness. Similarly, a county-by-county analysis of operation rates and mortality in Vermont showed a positive correlation between the two, a fact which must be attributed either to differing rates of surgical disease, which seems unlikely, or to unfortunate variations in surgical judgment. Finally, Duncan Neuhauser at the Harvard School of Public Health has estimated that operative mortality for inguinal hernia is about four times

the nonoperative mortality in the population over sixty-five, and yet the number of elective herniorrhaphies in the Medicare population has doubled since 1965. And while the nature of surgical therapy makes statistical compilation and comparison easier than for medical treatment, there is little doubt that similar comparisons could be made among medical specialties.

These observations all seem unsettling unless the proper distinctions are drawn. The prattle about living conditions and mental health is attributable to domestic social policy and economics, as far from the idyllic domain of medicine as worldwide malnutrition. As for that petty cavilling about potentially adverse effects of medical or surgical therapy, a chorus of qualifications clamors to be heard. Only by maintaining great medical fortresses can sufficient rigors and adequate competition be insured during the training process to generate a hierarchy appropriate for the best of all possible medical worlds. If this fosters a crisis-intervention concept of medical practice rather than health maintenance, then this is necessarily for the best. If the responsibilities of a training physician teach him to pare to a minimum the time spent with each patient, then this lesson will be carried into his practice where the most rapid and profitable diagnosis and therapy possible will be effected, as is proper in this optimal of all possible medical systems. Therefore it can be seen that as long as we continue to carefully defend our boundaries, we are about to enter the best of all possible professions.

In light of the foregoing remarks and in the context of current medical controversy, it is obvious that our vigilance must be increased and our logical scalpels ground exquisitely sharp if we are to preserve this medical fortress nonpariel against the erosions of a responsibility for or response to pandemic malnutrition, diseases of sociopolitical origin or painful and unprofitable criticism. So it is even at this joyous time incumbent on me to reprimand my classmates and many if not most of our otherwise superb faculty—for they have failed to make these proper distinctions, many times consistently and even intentionally. Indeed this influence has been so pervasive at this school that I myself find the logic which defines this best of all possible medical professions progressively less accessible. During these ever more frequent spells of weakness induced in me by this school's distinction-blurring miasma, dimly I have begun to see a vision. It is a finite and even fallible world bereft of fortresses and speck-like pilgrims living in abstract murals, with doctors who are blind to the speciation of suffering, but not to its causes or its cures. Indeed, it is a world so far from being perfect that it is merely human.

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